

IN SITU BIOREACTORS AND METHODS OF USE THEREOF

## 5 ABSTRACT OF THE DISCLOSURE

10 The present invention provides in situ bioreactors comprising a biocompatible substance comprising nucleic acid molecules and capable of cellular ingrowth and systemic delivery of a bioactive agent. Also provided are compositions, devices, and kits comprising the same. In various embodiments the biocompatible substance comprises a matrix and at least one nucleic acid molecule encoding a bioactive agent. In other embodiments bioreactors are provided wherein a first gene that encodes a growth factor is present and a second gene encoding a bioactive agent is present during manufacture or provided to the bioreactor following manufacture or implantation.